RHODE ISLAND
LEAD SCREENING PLAN

CHILDHOOD LEAD POISONING PREVENTION PROGRAM

RHODE ISLAND DEPARTMENT OF HEALTH
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EXECUTIVE SUMMARY.

As we enter our fourth decade of public health efforts to prevent childhood lead poisoning, some might wonder why a formal lead screening plan was necessary. Despite some skepticism, a committed group of state health department staff, community providers, advocates and parents worked diligently over a period of several months to document and reassess our secondary prevention strategy. This document will serve our community over the next several years as we attempt to reach 100% compliance with our state screening regulations. Moreover, the process of developing this document gave us all a chance to appreciate the power of our integrated approach to prevention of childhood lead poisoning and to share with others some of the root causes for our nationally recognized success.

Closing the gap between 85% and 100% screening rates will require continued effort in all three areas of public health practice: assessment, policy development and assurance. We will continue to use the principles of the Title V, Maternal and Child Health Program: culturally competent, community based, comprehensive and coordinated care for all children and families, integrating into all levels of prevention programs information and services to address childhood lead poisoning.

Information based on complete and accurate reporting of all blood lead testing results linked to our integrated child health follow-up and tracking system called KIDSNET will increasingly serve as a tool to drive screening and follow-up activities. We have for the first time a tool to connect in real time information to improve timely lead screening as well as to document the barriers to high quality preventive services in every setting where children are provided a “medical home.”

KIDSNET has recently been recognized as a community resource by health care insurers who need to improve their lead screening performance. We think that this collaboration will demonstrate a value added because of our investment in high quality, accessible information about lead screening. This information will also serve us in forming better alliances with other important partners in lead poisoning prevention. We now have achieved better understanding amongst our community partners of the essential role that a public health agency must play in solving health problems as complex as childhood lead poisoning. Hopefully, our exodus from the role of direct service provision will no longer remain a major issue with advocates.

2. FREQUENTLY ASKED QUESTIONS ABOUT THE RI LEAD SCREENING GUIDELINES

A) Why is screening imperative?

Lead poisoning is a serious disease caused by the accumulation in the body of excessive lead from the environment. Lead poisoning can cause serious, irreversible damage to the kidneys and central nervous system leading to learning disabilities, eventual mental retardation and, in its most advanced stages, convulsions, coma and sometimes death.

SCREENING IS THE ONLY EFFECTIVE WAY
TO DETECT LEAD POISONING
before the severe symptoms occur.

B) What is Rhode Island's recommendation for lead screening?

- **UNIVERSAL** screening is the approach recommended.

C) What is UNIVERSAL screening?

- Universal screening means that every child residing in Rhode Island, who is under six years of age, must be tested for lead at least once a year by a blood lead analysis before or after a positive response to the Risk Assessment Questionnaire.

D) Can lead screening be done more frequent?

Yes. **More frequent** blood lead screening may be justified based on:

- A positive answer to the Risk Assessment Questionnaire (see the Lead Screening Guidelines at www.healthri.org/family/lead/leadguidelines.pdf) that is administered to each child along with the annual lead screening, or,
- if an elevated lead level is found, or,
- if a child under six is identified with high lead levels (Pb $\geq$ 20 µg/dL), or,
- if the child has been exposed to a lead hazardous environment, or,
- if the child is symptomatic, or,
- if the child has siblings who have had high lead levels, or,
- if the child is developmentally delayed, in which case he/she should receive blood lead screening tests at intervals appropriate for their developmental age.

E) Can lead screening be less frequent?

- For children 36 months and under there are **no exceptions**. All should have a blood lead test at least once a year.
- Blood lead testing may be discontinued after three (3) years of age ONLY if **ALL** of the following conditions apply:

1. All prior tests during the **FIRST** 36 months were < 15 µg/dL, **and,**
2. The child's **FIRST** screening test after 36 months of age was < 15 µg/dL, **and,**
3. The child has not moved to a new home; **and,**
4. The child's home has not undergone renovations; **and,**
5. The Risk Assessment Questionnaire (on the Lead Screening Guidelines, www.healthri.org/family/lead/leadguidelines.pdf) is administered to parent/guardian and all responses are "No."

F) Why is Rhode Island revising its Lead Screening Guidelines?

- To provide an updated, efficient and user-friendly tool to health care providers and other early child education professionals about recommended lead screening frequency in children under six.
- To ensure lead poisoning is identified at an early age.
- To be consistent with revisions made by the CDC in November 1997.

G) What are the prevalence rates of elevated lead in Rhode Island?

During calendar year 1999, the highest prevalence of elevated lead (Pb greater than or equal to 10 µg/dL) in children was found in the cities of Providence (18%), Central Falls (17%), Woonsocket (12%), Newport (10%) and Burrillville (10%). The lowest prevalence was found in North Kingstown, Smithfield, Charlestown and East Greenwich (each had a rate of 2%).

H) What are the high-risk areas in Rhode Island?

- All RI cities and towns have at-risk children. The condition of housing (more than half of the state's 414,000 housing units are believed to have lead-based paint), along with prevalence numbers (9% of children tested had lead levels of at least 10 µg/dL, compared to 4% at the national level) contribute to define the entire state as a high risk area.

I) How is lead screening defined?

In Rhode Island's Rules and Regulations (www.healthri.org/hsr/regulations/lead.pdf) the definitions read:

- **Screening** is *"A method for identifying an asymptomatic child at high risk of having childhood lead poisoning from a population of children not previously diagnosed as having lead poisoning or in a child not exhibiting signs or symptoms believed to be related to lead*

poisoning, including the obtaining of the necessary specimen(s) for a blood lead screening test, and specimen handling and preparation."

- **Screening test** is *"a blood sample obtained, either by venipuncture or finger-stick (capillary), from an asymptomatic child not known to be lead poisoned in order to identify the child's risk of lead poisoning."*

J) What tools are available to identify children unscreened in my practice?

KIDS NET is one of them. KIDS NET is the Department of Health's automated tracking and follow-up system which links pediatric public health programs to each other and to health care providers. A pediatric practice linked with KIDS NET has access to all records of children born on or after 1997 and can review and update certain information for their patients. Lead screening, participation in WIC, results of newborn hearing assessment and other information is available in the KIDS NET system.

Additional efforts to further increase and improve individual practice's screening performance are continuously being developed. For collaborative initiatives and genuine partnerships to tackle lead screening, contact Peter R. Simon, MD, MPH, at peters@health.state.ri.us in the Division of Family Health.

K) What about lead exposure and symptoms?

We are all exposed to lead in the environment. In most cases the body adequately excretes lead and no measurable damage is done. However, when an individual is exposed to a more concentrated lead hazard, more lead is taken into the body than is excreted. This generates excessive lead which is referred to as "lead elevation," "lead burden" or "undue lead absorption." Continued exposure and ingestion of lead eventually result in a more serious health problem: lead poisoning.

Early symptoms of lead poisoning are common to many other conditions, including headaches, irritability, tiredness, loss in appetite, and stomachaches. Since these symptoms are not specific to lead poisoning, quite often parents, nurses and doctors do not suspect a lead problem.

L) Are other groups or populations at risk?

In addition to children under age six, three groups of people are likely to be affected by environmental lead:

1) Pregnant women exposed to lead hazards,
2) Adults working in occupations where lead is processed or present, and
3) Adults doing renovations on older homes.

Consultation with a physician is recommended for individuals in these categories.

3. LEAD SCREENING GUIDELINES

As originally formulated in the law (1991) and further refined in the Rules and Regulations put in effect since 1993, Rhode Island requires **UNIVERSAL** Screening for lead poisoning, which involves **screening every child under six years of age at least annually.**

For all children under 6 years of age who have ever had an elevated lead level, blood lead testing should be done at least annually, but more often depending on lead level and medical need. When lead levels are elevated, more frequent screening is required regardless of the age of the child. For schedule of more frequent screening, refer to the Lead Screening Guidelines on www.healthri.org/family/lead/leadguidelines.pdf. Furthermore, in the cases of developmentally delayed, symptomatic children or other special cases, a clinical judgment is advised and a different lead screening schedule may be recommended.

For additional guidance and/or special circumstances, a consultation with Peter R. Simon, MD, MPH, Medical Director of the Childhood Lead Poisoning Prevention Program is available.

The RI Lead Screening Guidelines are available in a one full color page. The Guidelines are primarily a tool to assist health care providers to follow appropriate screening recommendations for their patients under six years of age.

The newly Revised Guidelines (included in this document) will be made available to:

- Members of the Lead Screening Advisory Committee
- All health care providers caring for young children, including pediatricians and family doctors affiliated with the Health Plans,
- Physicians who participated in the Guidelines review process,
- Medical Directors of Managed Care Organizations, and
- Any other provider and/or health care professional, upon request.

The RI Lead Screening Guidelines
are available by calling us at 1-401-222-5921, or at
www.healthri.org/family/lead/leadguidelines.pdf

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4. LEAD SCREENING ADVISORY COMMITTEE.

Revision of the state lead screening guidelines was no small task and had a multitude of facets, from the data analysis to the document design. Rhode Island's approach to develop a statewide policy for lead screening has been completed after a long process with the inclusion of a multidisciplinary team working in synergy with state officials. Thanks to the efforts of all committee members and their organizations, this document is now available to health care providers, who jointly with schools, day cares, other early childhood entities and the Department of Health can ensure timely screening for every child in Rhode Island.

Upon recommendation from CDC's guidelines released in 1997, the Committee was formally organized for purposes of analyzing current screening efforts and to provide input in the formulation of new plans and policies related to lead screening. Starting in the summer of 1998, the Committee has been meeting regularly on a quarterly basis and participation has increased and evolved over time as state screening efforts have been newly formulated, reshaped, and/or restructured.

With the completion of the present guidelines the work of the Committee has not come to an end. Ongoing updates on current efforts will be provided, and further input will be sought for various purposes related to the implementation of the plan.

Thanks to all distinguished members of the Lead Screening Advisory Committee. (See Membership-Lead Screening Advisory Committee).

Additional Primary Care Providers' participation.

The pediatric community represents the primary audience to use the present Lead Screening Guidelines and Plan. As such, efforts have been made to involve physicians and include their expertise and input in the revision of the Guidelines.

In addition to the Department of Health's Medical Directors, William H. Hollinshead, MD, MPH, and Peter R. Simon, MD, MPH, input from other physicians has been sought. Patrick Vivier, MD, MPH, has regularly attended the meetings and participated in some of the efforts related to lead screening. Additionally, Lyman Page, MD, is involved with the lead screening Quality Assurance initiative in collaboration with the Managed Care Organizations. The Primary Care Advisory Committee, (see Membership-Primary Care Advisory Committee) chaired by Donya Powers, DO, also participated in the review of the Guidelines and provided input, as requested by the Division of Family Health's Director at the Advisory Committee June 2000's meeting.

Physicians from individual practices were involved as well. "Lead Month" (May 2000) activities involved having the Lead Program's staff visit pediatric practices in several parts of the state. The purpose of the visits was to emphasize the importance of lead awareness activities, distribute posters and incentives and invite physicians to use our educational materials and web

site for information. During the visits, some physicians expressed interest in giving feedback regarding the Lead Screening Guidelines. Providers interested in participating (see list of physicians/practices in Additional participants), were subsequently contacted by the Medical Director to highlight the importance of their participation and ensure their input was integrated.

It is evident that efforts were made to include physicians' input and expertise in the review process. Once again, thanks to all physicians who in one way or another contributed ideas and suggestions to the revision of the Lead Screening Guidelines.

5. LEAD SCREENING LAW

- **Introduction.**

Chapter 24.6, the "Lead Poisoning Prevention Act" under RI General Law was passed in 1991 with Rules and Regulations issued in 1992 calling for actual implementation at the beginning of 1993. Rhode Island is one of the few states (along with Massachusetts, New York, Illinois and Delaware) in the nation with screening legislation in place and is the second state to implement a screening law, following CDC recommendations issued in 1991. A united effort by legislators, public health officials, advocates and parents is to be commended for the realization of a task that has proven to be near to impossible in other states.

The law is a comprehensive compendium of requirements that aim for a safer environment for Rhode Island children. The law can be described as a broad umbrella of components that includes sections on lead screening, lead inspections, methods of measurement and standards, reporting requirements, real estate notification and disclosure, provisions for lead hazard reduction, licensing and certification requirements and, last but not least, compliance and enforcement.

With regard to screening, RI's law plays a critical role in the surveillance of lead poisoning. It clearly outlines screening at appropriate ages and provides for discontinuance of blood lead testing if certain conditions apply and/or religious beliefs impede parents to conduct the testing. Furthermore, the law facilitates data collection through a centralized specimen analysis system, managed and administered by the State Laboratory. The screening methods recommended combined with data collection and many efforts on the part of providers and the State over the last seven years resulted in high screening rates. (Rhode Island's lead surveillance system clearly surpasses any other state in terms of completeness, laboratory reporting and report-generation capacity.)

- **Screening applicability, screening schedule and discontinuance.**

Section 3.1 "General Requirements" of the RI Rules and Regulations (www.healthri.org/hsr/regulations/lead.pdf) read the following, about lead screening applicability, schedule and provisions for discontinuance:

3.1. General Requirements.

(a) ***Applicability.*** *The following persons/organizations shall make reasonable efforts to ensure that all their patients/clients under six years of age receive screening for lead poisoning using an approved laboratory method specified by these Regulations and at intervals specified in Subsection 3.1 (b) below:*

(1) Each primary care physician or provider licensed in Rhode Island; and

(2) *Each licensed, registered or approved health care facility, including but not limited to, hospitals, clinics and health maintenance organizations; and*

(3) *Each health care program funded in whole or in part with State funds or administered by any State agency and having child health components. These programs include, but are not limited to, Special Supplemental Food Program for Women, Infants & Children (WIC); Preventive Pediatric Services Program; Medicaid; General Public Assistance; Aid to Families with Dependent Children (AFDC); and RIte Care.*

(b) ***Screening Schedule****. All children in Rhode Island shall be screened for blood lead in accordance with the following schedule:*

(1) *Each child between nine (9) and thirty-six (36) months of age shall be screened for blood lead at least annually. More frequent blood lead screening of asymptomatic children less than thirty-six (36) months of age may be justified based on the child's residence, the condition of the housing where the child resides, and the prevalence of lead poisoning in the child's neighborhood.*

(2) *Each child between thirty-seven (37) and seventy-two (72) months of age shall be screened for blood lead annually, except as provided for in Subsection 3.1 (c) below.*

(3) *Children who are developmentally delayed shall receive blood lead screening tests at intervals appropriate for their developmental age.*

(4) *Children exhibiting signs or symptoms consistent with lead poisoning shall have an appropriate diagnostic evaluation, including a venous sample for blood lead determination, and shall not be considered appropriate candidates for a blood lead screening test.*

(c) ***Discontinuance of Annual Blood Lead Screening****. Annual blood lead screening for each child between thirty-seven (37) and seventy-two (72) months of age may be discontinued under the following circumstances:*

(1) *All of the child's blood lead screening tests conducted during the first thirty-six (36) months of life were less than fifteen micrograms of lead per deciliter (15 µg/dL) of whole blood; and*

(2) *The child's first blood lead screening test conducted between thirty-seven (37) and seventy-two (72) months of age was less than fifteen (15) µg/dL; and*

(3) *The child has not moved to another residence; and*

(4) *The child's parent or guardian has not reported conditions at the residence which may pose a lead hazard. Such conditions include, but are not limited to, uncontrolled power sanding of a neighbor's house, renovation of the child's home involving generation of dust, or proximity to a known or suspected source of lead contamination; or*

(5) *The child reaches seventy-two (72) months of age.*

- **Documenting Lead Screening as part of school entry enrollment.**

Partnerships and participation from entities identified under the statute involved in the care of children under six is required to document evidence of lead screening compliance. Entities such as schools and childcare are major participants in this endeavor. With regard to documentation of compliance with lead screening as part of school and childcare entry the RI Regulations provide that:

> ***3.1 (d) School and Child-Care Facility Entry Requirements.***
> *(1) Public and private kindergartens and day-cares, preschools, early childhood education programs, or other child care facilities shall require a certificate indicating compliance with the screening requirements in this Section as a condition for initial enrollment.*
> *(2) The certificate required by Subsection 3.1 (d)(1) above shall be completed by the child's health care provider or other individual who conducted the screening on forms approved by the Department.*

- **Exemptions.**

The lead screening exemption reads:

> ***3.1. (e) Exemptions to Screening Requirement***.
> *"The screening requirements in this Section shall not apply if a child's parent or legal guardian signs a sworn statement indicating that blood lead screening is contrary to his/her religious tenets and practices. "*

In the rare occasions that religious beliefs impede parents to have their children lead screened, the sworn statement can be done in the Lead Poisoning Screening Exemption Form, available by calling the RI Childhood Lead Poisoning Prevention Program.

- **A final word about RI lead screening law.**

Rhode Island law has been called one of the most comprehensive lead screening legislation in the country, and continues to be used as a model for the formulation of screening policies in other states.

The Lead screening law is the tool that has allowed the state to achieve:

- One of the highest rates of compliance with lead screening
- One of the best surveillance tools to further assess prevalence of lead poisoning in the population, to quantify the extent of the problem, to group resources, refine strategies, etc.,
- Higher level of adequacy to serve the Rhode Island community,
- Foundation for Quality Improvement partnerships with Primary Care Providers, Managed Care Organizations, etc.

6. LEAD SCREENING IN RHODE ISLAND.

A brief look at the past and how we evolved

To understand the evolution of lead screening in Rhode Island it is worth it to at least include a brief discussion of past efforts and the role of the health care industry that made significant contributions to the current stage of awareness and provision of lead screening.

The first national massive movement towards the battle against lead poisoning was formally initiated by the ban on lead paint use in the construction industry in 1978, over twenty years ago. With the lead paint ban came some awareness that: a) lead contamination could negatively affect children's health, and b) the absence of solid research studies to prove the extent of such effects, both of which were overwhelmingly changed over two decades.

The Rhode Island Department of Health approached lead screening from different angles and with collaborative efforts. Our multi-tiered strategy included –at least- five components: the summer screening program, collaboration with Day cares/Head Starts, WIC and an Outreach component. The following paragraphs give a brief summary of each strategy's content.

- **The Summer Screening program.** In the late 1970s, Rhode Island conducted one of the first population based lead-screening program in the nation, more known locally as the "Door-to-Door" program. Outreach workers were trained to offer capillary tests to children under the age of six living in selected high-risk neighborhoods, primarily during the summer months and also throughout the year. The absence of a regulatory body, the lack of formal lead screening guidance for health care providers, poor access to insurance and marginal public awareness of lead poisoning, were evidence at that time that an effective and easily accessible strategy such as the summer screening program was needed. Incidence in the high-risk neighborhoods visited was alarmingly high. At that time, no sophisticated prevention services or interventions were in place. Lacking the infrastructure, the summer screening program was the only viable lead poisoning surveillance strategy in the state.

- **Primary Care Physicians participation.** The epidemiology of lead poisoning cases identified through the summer screening program was an engaging vehicle to invite physicians to lead screen their patients. Even before the Lead Law was enacted, some physicians, especially those practicing in the high risk areas started to regularly order a lead test for young children. Thanks to the PCPs active participation, children not only started receiving lead levels monitoring as a preventive measure, as opposed to a medical treatment, but physicians helped families to understand the importance of screening, which in turn, created wider awareness in the need to prevent lead poisoning.

- **Day care and Head Starts.** The early efforts of Quality Assurance on Lead Screening were also the result of collaborations with day cares and head starts. Serving the young children population, different day cares and head starts worked jointly with our summer screening teams to offer on site lead screening to their enrollees during the 1970s and 1980s. Children

coming from high-risk areas, of recent migratory status, uninsured and from low income families were targeted this way. Day Cares and Head Starts were the vehicle to promote the idea among the parents, obtain consent forms, provide space, assist in the coordination of on-site lead screening, and subsequently work with us to ensure that families receive instructions for further screening, follow up or medical treatment, as applicable.

- **Women, Infants and Children (WIC) Program.** An early and strong partner in lead screening promotion was, with no doubt, the WIC Program. WIC participants are required to personally receive WIC benefits (checks to purchase nutritious foods) at one of the WIC agencies throughout the state, and bring their participating children for certifications and nutrition counseling, including the Hemoglobin and Hematocrit assessment through the collection of a blood sample. Concerned for the overall well being of young children, WIC agencies made lead screening an additional service offered to their participants. This was achieved by either collecting an additional blood sample for a lead screening test, working in collaboration with the Health Center where a WIC agency is co-located, and/or working with the participant's physician to order a lead test prior to WIC certification. During the 1980s and early 1990s, most of the WIC agencies in the state ensured lead screening was accessible to their participants.

- **Outreach.** Promoting the need for lead screening has always been considered an ongoing activity, and as such, the Lead Program has made efforts to bring the message through a variety of channels. One major outreach strategy was all the attention given to the summer screening program and the educational materials disseminated and prepared specifically for the summer visits to Rhode Island neighborhoods (door hangers, flyers, etc.). Other forms of outreach conducted in Rhode Island includes the ongoing participation in health fairs, at schools health classes and some other groups or entities serving children under six years of age.

Perhaps one of the most important and more visible lead screening strategy constitutes our Summer Screening program, described first among our multi-tiered approach. The Summer Screening Program (known as "Door-to-Door") continued year after year since the late 1970s. Different neighborhoods were selected as resources allowed and other program components were added. An educational feature filled the information need. Likewise, sending all specimens to the state laboratory facilitated data gathering and reporting, which helped planning for management purposes and fulfilled the surveillance responsibility.

Despite the lack of earmarked funds for lead surveillance, and the fact that categorical lead poisoning prevention grants were only made available in 1981, the Department of Health continued to support summer screening efforts, conduct blood lead specimen analysis, and communicate results to providers. In addition, funds and staff support were made available for the formation of the first specialty clinic ("Lead Clinic" at St. Joseph's Hospital) to provide medical follow up to significantly lead poisoned children in the state.

Great recognition was given from part of the community and advocates to the valuable efforts of the state's summer lead screening program. It was expected in the neighborhoods every year and inevitably presented by the media every summer.

In 1991, The Centers for Disease Control and Prevention issued a set of recommendations that called for state efforts to build a lead screening infrastructure that favored surveillance, which, in turn, would help to identify prevalence and incidence of lead poisoning. Rhode Island responded by formulating legislation entitled "Lead Poisoning Prevention Act." This legislation became law and was fully implemented by March of 1993. This effort was possible thanks to the commitment and joint efforts of an entire community that had been made aware of the lead poisoning toxicity through many venues, including the results of the summer screening program. Having statutory requirement for annual lead screening helped tremendously in the achievement of an ever-increasing lead screening rate, although at a moderate pace during the first few years.

At the same time, categorical federal funds were again made available by CDC to states and allowed the marginal investments made in the past to be expanded into the Childhood Lead Poisoning Prevention Program at the state level.

Meanwhile, lead screening offered during the summer continued to be important and was maintained with very few modifications in the number of sites visited, program duration and minor administrative adjustments. Fortunately, the number of children with high lead levels identified declined (slowly). At about the same time, the health care industry was undergoing dramatic changes at the national and state level, and soon managed care became a very familiar word in everyone's vocabulary.

In 1994, RIte Care became available to families with income of less than 250 percent of the Federal Poverty Level and enrollment in health maintenance organizations was offered. The goal was to provide a "medical home" to each family, where all preventive care services –including lead screening- is the responsibility of the primary care provider. (By the end of May 2000, 25,441 children under six were enrolled in RIte Care and therefore have gained access to a "medical home" and preventive care services through a primary care provider.). The implementation of RI's managed care had significant impact on the insurance accessibility and providers' participation. With RIte Care, Primary care providers became responsible for all medically necessary services of each of his/her enrolled patients, including lead screening. Certainly, managed care fulfilled its role to provide medical insurance to the young population in the state.

As time went by, a change of focus in subsequent summer screening efforts was evident. The need to conduct a lead screening effort during the summer to capture uninsured children had greatly decreased, due to higher access to health care. The primary goal of offering lead screening during the summer to untested children still prevailed, but it implied an investment for which resources were not easily identifiable and for which responsibility was already switched to private entities. Most importantly, there has been an overall significant decline in the yield of children with elevated lead levels (Pb $\geq$ 10 μg/dL) since 1994, from 22% to 12% by 1997, a fifty percent decline in only three years! (see the Prevalence chart at www.healthri.org/family/lead/prevalence.htm).

Eventually became a need to completely redirect the focus of the lead screening efforts. Data supported further investment in those never screened, and a closer analysis was made. Through the analysis, it was found that a somewhat significant proportion of children screened by

the summer program and identified with elevated lead levels were missing subsequent venous testing, due to lack of transportation and other issues. A venipuncture test offered to them initially was believed to be a solution to this problem.

An important restructure was proposed and accepted by the community for the summer of 1998. The change involved enlisting the services of a mobile unit ("The Family Van") that could easily transport from neighborhood to neighborhood and offer venipuncture tests through a phlebotomist on staff. In addition, a segment of outreach and education was proposed to widely promote the new program's features and sites. Media efforts (radio ads and exterior bus cards) to increase awareness of the lead issue were coordinated at the same time. The pilot project was conducted in 1998 and for the first time, the summer screening program offered venipuncture tests. Furthermore, the project included a critical component of data gathering for purposes of establishing insurance need and lack of timely screening. Efforts to identify children never screened and with no insurance were also emphasized. After completion of 8 weeks of effort, many lessons were learned and a closer look was given to the program. Nevertheless, the program with the new format was conducted for the second time in the summer of 1999.

At the end of two consecutive years of offering the mobile unit, it was confirmed that the yield from screening was as small as 1% of the entire tested population. More specifically, only 12 children tested over both years were identified as significantly lead poisoned, out of 1,291 children tested. In addition, more than 95 percent had insurance coverage and a primary care provider. With regard to the untested children, it was found that about 20% of the children had not been screened before this effort, in spite of the fact that they had insurance and a primary care provider available.

In a separate assessment conducted recently by the Childhood Lead Poisoning Prevention Program it was found that over 96% of the children of (536) interviewed families had access to insurance and had a regular doctor. There was no direct relationship between insurance and whether or not a child was timely lead screened. Clearly, there had to be a strategic and collaborative effort on the part of public health to ascertain that insured children are adequately and timely screened for lead poisoning.

Additionally, in its 1997 recommendations, CDC required states to formulate a screening plan by analyzing the current situation and screening strategies, and urged states to fulfill the core functions of public health by enhancing its role of policymaker to positively affect changes. Rhode Island has currently a number of initiatives that comply with this framework and are directed to favor increases in screening rates.

With regard to the uninsured, although reduced in number, the public health responsibility continues to exist. A very small number of recent immigrants are still coming to the state and need to have evidence of a lead screening as a condition for school enrollment. Lead screening tests, along with immunizations are provided at no cost to the parent of uninsured children at two hospital-based clinics on an ongoing basis. Part of the requirement for providing the lead screening is to fill out a form that is a tool to assess reasons for using the service and access to insurance. In a period of over a year, only about twenty screenings have been completed in each hospital-based clinic. The service remains available all year long and is widely promoted at least once a year.

7. BLOOD LEAD SPECIMENS ANALYSIS AND REPORTING.

Since the formulation of Rules and Regulations (www.healthri.org/hsr/regulations/lead.pdf) to implement the Lead Poisoning Prevention Act of 1991, all blood lead screening specimens collected by and/or ordered by health care providers or professionals must be submitted to the Rhode Island Department of Health Laboratory for analysis.

Specifically, the Regulations state the following:

3.2 Childhood Blood Lead Screening.

Health care providers shall ensure that childhood blood lead screening is conducted either by venipuncture or by capillary blood lead sampling in accordance with the following requirements:

(a) Screening samples. All blood lead screening test samples, including venipuncture screening samples and capillary blood lead samples, taken from children under six years of age at the request of a physician or other health care provider licensed in Rhode Island, or as part of a child health program partially or fully funded by State funds or administered by any State agency, shall be submitted to the State laboratory for analysis, unless the Department has approved use of another laboratory.

(b) Samples submitted to the State Laboratory. All blood samples submitted to the Department laboratory for analysis shall be accompanied by a completed laboratory requisition form, including all data necessary for reimbursement by insurers, and shall be packaged in accordance with procedures established by the Department laboratory.

The State Laboratory has a courier service which picks up blood lead specimens as well as other clinical specimens from over 20 health care centers and hospitals. Results of analysis of blood lead specimens are sent to the submitter's address as listed on the requisition form. An additional task performed by the State laboratory involves billing insurers. Submitters of specimens can assist the State in this task by appropriately recording the patient's insurance information on the requisition form. The results of analysis of blood lead specimens are sent to the ordering provider or specimen submitter, or both, if it's so indicated on the requisition form.

Blood lead is determined on fingerstick and venous specimens by graphite furnace atomic absorption (GFAA) spectrophotometry. The method involves diluting the specimen (1:16) with a matrix modifier solution that contains nitric acid, Triton X-100 and ammonium phosphate. Quality control samples are diluted in the same manner before analysis. The Laboratory has three GFAA instruments and each instrument is equipped with Zeeman background correction. The instruments are interfaced with a clinical Laboratory Information Management System.

Supplies for blood lead screening, and requisition forms are provided by the State Laboratory. Additional questions can be directed to James Sullivan, PhD, at 401-222-5578.

8. MEDICAID ROLE IN LEAD SCREENING

We are frequently asked how the program has achieved such high rates of screening among children insured by Medicaid in Rhode Island. Clearly, the lead screening success can be partly attributable to the RIte Care Program, the statewide managed care health program for Medicaid-eligible children.

In 1992, Governor Bruce Sundlun charged the RI Department of Human Services and the Rhode Island Department of Health to prepare an 1115 Medicaid Waiver proposal for expanding health care access through a managed care model to children from birth through 8 years in families with incomes less than 250% of the Federal Poverty Level. As part of that process, a research plan had to be developed, since under Medicaid law, 1115 waivers are considered research and demonstration projects.

One of the principle strategies of public health is the use of surveillance to develop disease control strategies. The RI Department of Health Division of Family Health had developed one of the strongest maternal and child health surveillance systems in the US that included population based surveillance of births, deaths and hospitalization as well as program data documenting utilization of newborn screening, lead screening, WIC enrollment, home visiting and Early Intervention enrollment. Given this, our Division of Family Health was asked to develop a set of research hypotheses and measures of accountability that would eventually be used to develop managed care contracts for purchasing coverage for the newly eligible population as well as children previously categorically eligible for medical assistance in RI. The developed hypotheses included measures such as rates of low birth weight, utilization of early prenatal care, immunization and finally lead screening by 18 months of life. The lead screening measure was selected based upon the data accessible to the Division through established mandatory laboratory lead screening reporting.

In 1993, the Health Care Financing and Administration (HCFA) approved the initial waiver proposal. Ultimately, the Early, Periodic, Screening, Diagnosis and Treatment (EPSDT) requirement for lead screening by 18 months of age, as required under RI state law, was incorporated into the contracts with the four RIte Care managed care plans as a reference in the EPSDT periodicity schedule (see EPSDT schedule).

The July 1998 RIte Care contract revision included language pertaining to performance goals. The performance goals, developed with RIte Care health plan review, were grouped into three areas: administrative, access and clinical. The Department of Human Services assessed health plan performance on these goals through on-site review and encounter data review. Performance goal assessment criteria were provided to the plans. To date, performance goal review has been completed for calendar years 1998 and 1999, with several modifications in methodology.

In 1999, the first year that the plans were offered incentives to improve performance in delivery of preventive pediatric services, we received a request from one plan whose encounter data showed very low rates of lead screening. This plan believed that their encounter data systematically underestimated the true lead screening rate for their enrolled members and asked

that the Lead Program's database be used to make an independent estimate of lead screening among their enrolled population. This request led to the plan receiving its incentive award and raised the awareness of the limitations of encounter data to assess performance for such preventive pediatric services. (Subsequently, a mechanism was identified and we are now working with all participating MCO's in a data sharing arrangement to assure lead screening for all children by 18 months of age. See the "Quality Assurance Strategies" section.)

Most recently, the Center for Child and Family Health has initiated a monitoring program designed to provide quarterly performance information updates to the RIte Care Plans for a number of preventive health measures, including the initial lead screening. It is intended that the health plans will use this information to develop outreach strategies until the lead screening rate approaches 100%. Below is the Lead Screening Performance Goal, part of the Rite Care plans' contract:

> *Members who reach 18 months during the reference period who have had an initial lead blood screen within the preceding nine months.*
>
> Standard: 85 percent
> Reference period: Calendar year 1999
> Rite Care specific
>
> Performance Assessment
>
> Assessment is based on analysis of the encounter data edited and loaded by EDS no later than March 31, 2000.
> **Denominator:** All children who reach 18 months of age during the reference period and who have been enrolled with the Health Plan at least 31 days.
> **Numerator:** Of the children identified in the denominator, all those with an initial lead blood screen during the preceding nine months.

Undoubtedly, collaboration between the Rhode Island Departments of Health and Human Services is a major asset in the enhancement of lead screening surveillance.

9. PREVENTION STRATEGIES

The number of services for lead poisoned children and the efficiency with which they are delivered have significantly increased and improved over the last few years in the state of Rhode Island.

One significant improvement has to do with the environmental inspections. Years ago, the timeframe for the completion of environmental inspections in the homes of lead poisoned children was of several months. Since inspections were privatized in early 1998, that time has now decreased significantly, to somewhere between four to six weeks from the time the lead test result is available in the Lead Program's Stellar database until the inspection is offered.

There have been significant improvements in the provision of case management as well. One important milestone has to do with the establishment of the first Rhode Island's Lead Center in October 1998. The "HELP Lead Safe Center" is an entity that was funded to provide a full range of critical services to lead poisoned children and their families. In addition to comprehensive care, the Lead Center partners with St. Joseph's Lead Clinic and offers transitional housing on site if needed. Case Managers on staff assist homeowners in the identification of alternative housing and/or application for lead hazard reduction funds (available from entities such as Rhode Island Housing and the City of Providence). As a provider of lead poisoning case management services for Medicaid, the Center also provides funding for replacement of lead contaminated windows in the homes of lead poisoned children enrolled in RIte Care and being served by the Lead Center.

Additionally, pilot projects and the formulation of new efforts has been the key to our three-prong approach prevention. Three of the most innovative prevention strategies that have been implemented include: the Parents Outreach contact, the Home visits offered to children with moderately elevated lead levels and a newly devised collaboration with WIC. Following is a description of each of them:

- **Parents' outreach contacts**

Past experience has proven the gain that can be made to further inform parents about lead poisoning. Although most parents are aware of the dangers of lead, only some are actively seeking help or using preventive measures. Efforts are continuously made to increase the level of awareness among parents of young children.

Since early 1999, parents whose children have been lead tested and had results between Pb 10 and 19 μg/dL are sent a friendly note confirming their child has been tested and providing basic information about the lead levels, how to interpret them and where to look for additional information. Emphasizing our efforts to communicate with more than the mainstream population, correspondence is sent in English and Spanish, covering about 95% of the audience.

Experience suggests this outreach effort is adequate. It is not uncommon to receive calls from parents who have received our letter, asking questions, looking for clarification, making suggestions and/or in search of additional guidance. It has also become apparent that in many cases the note sent by the Lead Program is the first communication parents receive about the dangers of lead. Current plans are to continue with this outreach effort although some enhancements and expansion of the project can be considered in the future.

- **Home visits to children with moderately elevated lead levels (confirmed Pb ≥15 to 19 μg/dL)**

One major achievement that has been made in the area of primary prevention has to do with the preventive lead education provided at home, at no cost to the parent, to children with confirmed lead levels of 15 to 19 μg/dL.

In many cases, a child with moderately elevated lead level is a candidate to become significantly lead poisoned in the near future, which can be prevented with family education and support. The Family Outreach Program (FOP) has been providing similar services to thousands of families in the state. Several assessments, including newborn screening, developmental and metabolic screenings are provided by the FOP to families in their own homes. The FOP has professionals specialized in nursing and/or trained paraprofessionals such as Outreach and Family Workers to make complete family assessments and provide a full range of services and referrals.

Since its implementation in March 1999, and for a 12-month period, more than 200 families have been offered home visits to provide basic lead education and wet cleaning techniques.

At least two home visits are scheduled to educate the family about the dangers of lead. In the first visit a visual inspection is performed and a training to identify and reduce the child's exposure to potential lead hazards is provided. The visual inspection includes an assessment of the interior as well as the exterior of the house, and a practical demonstration of wet cleaning using a mix of water and a high phosphate cleaner (TSP). The family is also provided with necessary products (duct tape and a sample of the cleaner) to use as immediate preventive measures. There is also an effort to make referrals to other services, as needed, including lead-safe day care facilities, housing authorities and code enforcement units.

A second visit is provided to the family to ensure that parents understood and have implemented temporary environmental lead hazard reduction measures. At this visit the FOP expert also emphasizes the importance of good nutritional practices and responds to any other questions.

Within one month of the referral date, the FOP sends a report to the RI Department of Health, including the content of the visual assessment and the final outcome of the visits offered to the family.

We expect to continue to invest efforts to offer lead education provided in the homes of children with moderately elevated lead levels.

- **WIC's role in lead screening.**

Another strong partner in the prevention of lead poisoning has been the Women, Infants and Children (WIC) Program. WIC was our partner since the early years when lead screening was not mandatory and years before managed care was implemented in the state.

Serving the same population of young children, WIC is in a favorable situation to emphasize the importance of lead screening. With this in mind, and considering new infrastructure and mechanisms available, a collaborative pilot effort is planned between WIC and the Lead Program.

The effort consists in adding a lead screening segment to the nutritional assessment provided to WIC participants at certification and recertification visits. To make this task possible, KIDS NET will be made available to WIC agency. WIC staff will access KIDS NET to review records of all WIC participants scheduled for re/certification visits (and are age appropriate to be in KIDS NET and have/need lead screening). The purpose of such review is to assess lead screening compliance, identify lead levels and make referrals when appropriate. This information will also be used to determine WIC eligibility, as elevated lead levels make applicants eligible for WIC services.

Depending on the situation, a referral for lead screening and/or medical follow up will be made from the WIC staff. In both cases, the family will receive an educational session about lead poisoning prevention with materials culturally and linguistically appropriate. WIC and the Lead Program collaborated to ensure educational materials address literacy, cultural and linguistic needs of families.

Results of this pilot will determine strategies for further implementing the lead screening segment education in WIC nutritional services in agencies statewide.

10. QUALITY ASSURANCE STRATEGIES

The Lead Program's goal in the area of Quality Assurance is to promptly identify pockets of unscreened children, offer technical assistance and further refine policy when applicable. Although screening rates in the state have been in a steady upward increase during the last few years, not all children are screened on time and our efforts to further improve lead screening shall not cease. Fortunately, we now count with several partners and strategies to engage in the improvement of lead screening compliance.

KIDS NET, the state's Managed Care Organizations and the Immunization Program are three of our partners in the Lead Screening Quality Assurance approach. We recognize the importance of these partnerships and express thanks to KIDS NET, the Health Plans and the Immunization Program for their commitment to lead screening.

In the paragraphs below we detail the concept of such partnerships and include an up to date summary of efforts.

- **KIDSNET/Lead Outreach**

KIDS NET along with the data available in the Lead Program's database, Stellar, are the perfect team that has made this strategy possible. Stellar only contains information on children already screened, while KIDS NET (see definition of KIDS NET on literal J) of Frequently asked questions about the RI Lead screening guidelines), captures demographic information on all Rhode Island births occurring since January 1, 1997. Lead screening data is exported to KIDS NET and matched against KIDS NET existing records, whose product gives us for the first time the capability to establish a denominator of a statewide lead screening rate.

In the spring of 1998, KIDS NET's children were turning 15 months old and therefore at an age when lead screening must be performed. This was perfect timing to initiate a quality assurance initiative, which consists of generating KIDS NET lists of children turning 15 months with no evidence of lead screening in the system, and subsequently sending a letter to the parent. (Although lead screening is recommended to start at any time after 9 months of age, it was decided to allow some time and start generating reports for children 15 months old. This extra time ensures further data collection as well as allows for missed and rescheduled appointments.)

The goals of the KIDS NET/Lead Outreach initiative are described below:

1) to identify children with no evidence of lead screening,
2) to identify barriers to timely screening
3) to update KIDS NET addresses

For purposes of identifying possible barriers to screening, a parent-to-parent telephone survey conducted months after the outreach letter was also made part of the initiative. The pilot survey

was completed during the fall of 1998 and provided the basis to establish a systematic, on-going survey that helped us to identify lead screening deterrents.

The most common response from parents had to do with the assumption that lead screening is automatically performed at the child's annual check up visit. Other barriers identified by the survey include parents' lack of awareness to have their children tested, time investment needed to mobilize the family to an off site laboratory and parents' concerns regarding the infrequent but traumatic experience to collect the blood specimen in a young child.

The Program's Parent Consultant has systematically contacted parents of children screened and unscreened according to the KIDS NET system for about six months. Specific questions asked include the reasons for having their child tested or not tested, insurance and primary care provider availability, as well as laboratory location for conducting the test. Findings of the telephone interviews conducted during the first year of the effort have been shared with the Lead Screening Advisory Committee.

Although the value of the telephone interviews is not questionable, it has served as a qualitative assessment tool that has already informed the program about screening barriers that need to be considered for policy development. Continuation of the interviews on a systematic basis and/or modification will be reassessed. Monthly correspondence to parents, however, is an established and ongoing effort.

- **KIDS NET strategy for individual providers**

The KIDS NET system, among other capabilities, has or is fed the information needed to generate individual providers reports of "never screened" children who are 15 month old or older, are enrolled in a specific practice and have no evidence of lead screening in KIDS NET. This report generation capacity was used for lead screening the first time in May 2000, as an additional component of "Lead Month." At that time, only providers linked to KIDS NET received the report. It was clearly indicated the report was an available tool to assist in lead screening, and it may not be completely accurate due to the fact that KIDS NET may not have been notified of patients transferred out of the practice, some laboratory results may not have been reported, or children born out of state may not have been listed.

As a result of feedback received from the providers who used the "never screened" report, it was established that the three reasons above stated were present and that the report needed to have a higher degree of accuracy before it is massively and routinely disseminated to providers for quality assurance purposes. It was then decided to incorporate an additional effort in the Lead Screening Quality Assurance strategy.

The newly formulated initiative consists of selecting a provider by number of patients 15 month old or older, or attending the provider's request, and provide individual Quality Assurance. The steps for this effort are as follows:

- Select a provider
- Generate the KIDS NET "never screened" report

- Conduct manual/electronic review in Stellar (Lead program's database) to ensure all data has been properly transferred to KIDS NET
- Identify the number of children with no evidence of lead screening in Stellar
- Contact the provider and schedule a chart review on site, conducted by Lead Program's staff
- Evaluate findings/formulate recommendations from QA Lead/KIDS NET group
- Communicate findings/recommendations to the individual provider

This effort started on the summer of 2000 and will continue for at least a year or until such time when the "never screened" reports are highly accurate and can be disseminated to all providers on an ongoing basis. At that point, the activity will be evaluated and new strategies or modifications of the strategy formulated.

- **Managed Care Organizations Collaboration**

A genuine collaboration between Managed Care Organizations and public health is currently underway. The initiative departed from conversations between the Department of Health's Director with representatives of the MCOs in an effort to formulate Quality Assurance strategies for improving access to children's preventive services.

Capturing the momentum to build commitment, the Division of Family Health's leadership, including representatives from the Lead, Immunizations, KIDS NET, Family Outreach Program and WIC met with representatives of United Health Care of New England, Neighborhood Health Plan of Rhode Island and BlueChip on March 1st, 2000. Different options were discussed and finally, due to data availability, resources and other issues, lead screening was selected as the first Quality Assurance effort.

The basis for this strategy rests on the fact that lead screening documentation is primarily in one or more of three places: the Lead Program's database (Stellar), the laboratory reports in providers' offices and the actual (coded) insurance claims submitted to the plans for payment purposes, but not all the results are in all three data depository locations. Hence, easy and complete access to evidence of lead screening could only be done utilizing a unique approach, joining resources and expertise.

Given the above, the actual content of the effort was defined at a later meeting in early April 2000. A data match was to be conducted as a pilot project. A one-month birth cohort was selected and criteria defined (children who were 22 months old, are actively enrolled in one of the Health Plans, had no lead screening claim submitted to the Plans and resided in Rhode Island) to prepare a file. Each of the Health Plans submitted their file, which then was matched against information on Stellar, the Lead Program's database, to determine whether or not the children had evidence of lead screening. Results of the data match were provided to each of the Plans, who in turn conducted another level of review, asking providers to supply us with evidence of lead screening, if existent in the individual's chart, or contact the patient to order the test.

A variety of efforts were made on the part of the Health Plans, the individual providers and the Lead Program to obtain the greatest benefit from this effort. As a result of the data match conducted on a pilot basis, it was found that:

- The lead screening rate for the one-month birth cohort was 86%, leaving a 14% of unscreened children by the time they were 22 months of age.
- Some technical glitches in the data transfer (from Stellar to KIDS NET, from Cerner –the State Laboratory computer system- to Stellar) were identified. A corrective plan was immediately put in place.
- An important proportion of the unscreened population have had no contact with the provider, or had an unknown address or their place of residence was questionable (it was not clear whether or not they were still in the state). An individually tailored outreach approach would be needed for this population.

During August and September there were dialogues to establish the specific outreach contact each of the Health Plans would offer to the individual children identified as not having lead screening by the data match. It was then decided that due to the unavailability of telephone numbers and to assess family status and barriers to care, a one-on-one contact preferably in the home would be desirable. On a pilot basis, the Family Outreach Program offered to conduct a home visit to each of the families fitting the group for which the provider had already made an effort and was unsuccessful. Investments made in terms of time and staff, findings/outcomes of the visits, and potential benefits of effort continuation will be evaluated in the next phase.

Meanwhile, the group formed by Department of Health representatives and Managed Care Organizations agreed to establish an ongoing effort. Based on the findings of the pilot project, the ongoing effort will be conducted on a QUARTERLY basis and will be reassessed as needed. The content of the ongoing partnership approach with the MCOs is described below:

The population is defined as follows:

- 22 month old children
- Actively enrolled in the MCOs Plan
- No CPT 83655 code on individual Plan's claims data
- Resident of RI, MA or CT

The content of the approach:

- Selection of (3 month) birth cohort
- The Health Plans will submit the data file following specified criteria
- The Lead Program will conduct the data match and prepare a file with results for each of the Health Plans
- Health Plans will send a standard letter to providers with list of unscreened children.
- Providers will either:
  a) Provide evidence that a lead screening test has been done,
  b) Make an effort to screen those children, or,
  c) Notify the Plans if their efforts were unsuccessful and further assistance is needed.

- For those cases where providers expressed further assistance need, there will be an outreach effort made, either by the Family Outreach Program to provide a one-on-one home visit or some form of individual outreach contact proposed by the Health Plans and agreed upon by the group.
- Results will be evaluated and next effort initiated.

• Annual School Survey

Another important partnership in Quality Assurance efforts involves the Annual School Survey conducted by the Immunization Program. The partnership is based on the need to address child health's issues in comprehensive ways, considering that children at risk for lead poisoning share many of the same socioeconomic characteristics as children who are underimmunized. The collaborative approach used to further identify pockets of need was to include a question about lead poisoning starting with the Annual Immunization School Survey for year 1999. Surveys are conducted each year in the Fall, and are sent to all day care facilities, Head Start sites and schools, all serving children under six and therefore required to document evidence of lead screening as an enrollment requisite.

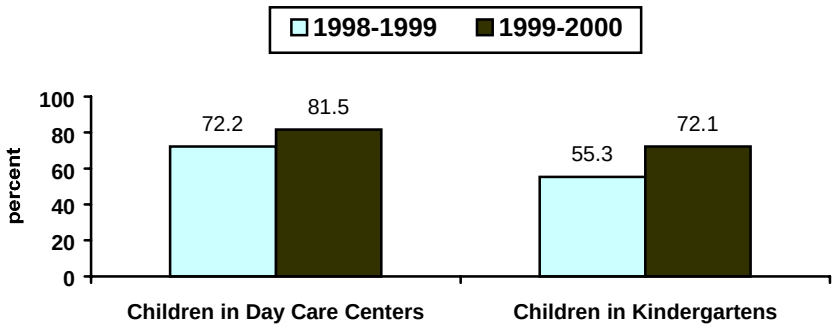
Results of the survey are later validated either on an annual or biennial basis at some of the participating survey sites, including community health centers, day cares and hospital-based clinics. Additional sites such as private providers and WIC sites will be included in the validation process in the future.

A small but important improvement has been made in lead screening documentation in the survey from year 2000 compared to the 1999 survey. Following are details.

RI Annual School Immunization Survey: Lead screening documentation

Entity	**1998-1999**		**1999-2000**	
	# entities	# children	# entities	# children
Day cares	142	6,682	260	10,808
Kindergartens	184	8,048	234	12,025
Totals	**326**	**14,730**	**494**	**22,833**

As seen in the chart below, the proportion of children who have documentation of being screened for lead poisoning was higher in day care centers than in kindergartens for both school years. For children in day care centers, the rate increased from 72.2% in 1998-1999 to 81.5% in 1999-2000, and for children in kindergartens, the rate increased from 55.3% in 1998-1999 to 72.1% in 1999-2000. Among children in kindergartens, five core cities had lower rates of lead screening than the rest of Rhode Island for both school years.



Percentage of children who have documentation of Lead Screening in School Record
Source: RI Annual School Immunization Survey

Findings of this effort as well as many others are widely promoted through inclusion in the program's publication the "Lead Update."

11. MANAGEMENT OF CHILDHOOD LEAD POISONING IN RI

In RI, a venous lead level equal to or greater than 20 μg/dL in a child under six years of age is defined as "significantly lead poisoning".

According to current RI Rules and Regulations, a child is "significantly lead poisoned" when he/she has a confirmatory test that determines the child's blood lead level is equal to or greater than 20 μg/dL. The Childhood Lead Poisoning Prevention Program has a mechanism in place by which children with such lead levels are identified, referred to appropriate services and followed up.

As stated previously, the state's law for lead screening and analysis of lead specimens is the starting point to management of lead poisoned children in Rhode Island. The State Laboratory analyzes lead screening specimens and sends a laboratory report to the provider and/or submitter. Lead screening data is therefore immediately collected in a database and daily reports are run to identify children's lead levels.

Blood lead levels design services provided to children. Following is a summary of procedures that depict the referral mechanism currently in place.

For children with confirmed lead levels $\geq$ 20 μg/dL, the steps are as follows:

1. The Stellar database generates a letter to the provider on a daily basis. The letter notifies providers of lead levels of significantly lead poisoned children and identifies steps/recommendations.
2. The provider then is contacted by telephone and is asked to:
   - Inform the family/patient about the lead level, explain what the lead level means and what to expect next
   - Verify the patient's address
   - Notify the Department of Health if unable to contact the patient or if different information is found
3. A period of three days is allowed to ensure the provider has had time to communicate the findings to the patient. (The three-day period does not apply when the provider has already communicated results to the patient and for urgent lead poisoned cases.)
4. After the three days period, the Referral form is completed and sent by fax to:
   - The primary care provider
   - The private inspector assigned to the address

- The agency in charge of comprehensive services (depending on the residence city, either the HELP Lead Safe Center or the Family Outreach Program)

The information included in the Inspection Referral Form enables the primary care provider, the case management agency and the private inspector to initiate contacts with the family for purposes of providing corresponding services.

The **primary care provider** is responsible for the medical follow up of the patient, and has the option to make a referral to one of the Lead Clinics, at St. Joseph's, Hasbro Children's Hospital or Memorial Hospital.

The **private inspector** who receives the referral is responsible for contacting the family and scheduling a mutual agreed upon time to conduct the environmental inspection of the child's primary residence. Outcome of the contact is reported to the Division of Family Health within five working days, to indicate any address change, date for which the inspection was scheduled, and/or any other circumstances that impede and/or allow scheduling the inspection.

Once the inspection is completed, the report is prepared by the inspector and mailed to:

- The Department of Health
- The agency providing case management services,
- Either the parent (for cases referred to the Lead Center), or the health care provider (for cases referred to the FOP)

The **Department of Health** sends an official notification to the homeowner with the findings of the environmental inspection, along with information for proper lead hazard reduction, resources and others. Further follow up and enforcement of non-compliant homeowners is the joint responsibility of the Department of Health and the Attorney General's Office.

The RI Department of Human Services involvement in the Windows Replacement Program for lead poisoned children.

The case management of a significant proportion of Rhode Island lead poisoned children is provided by the HELP Lead Safe Center, an entity in operations since October 1998. About 80% of the population served by the Lead Center is Medicaid eligible and services they receive are reimbursed by the RI Department of Human Services (RIDHS), Rhode Island's Medicaid agency. In addition, RIDHS is the first state that obtained approval to utilize Medicaid funds for the replacement of windows in the homes of Medicaid eligible lead poisoned children. Here it is a chronology of RIDHS involvement in the formulation and implementation of such strategy.

FALL 1996—Staff at the Department of Human Services (DHS) became aware that RIte Care children with lead poisoning were frequently re-exposed to lead due to lack of affordable, lead safe housing in certain areas of Rhode Island, especially urban inner cities.

1997—Department of Human Services analyzed all services provided to children with lead poisoning. Decision made to create a new provider type "certified lead center" which would provide comprehensive services to lead poisoned children, including case management and window replacement. All Medicaid children with elevated blood levels greater than 20ug/dL would be eligible for the case management service under a pre-existing targeted case management group. Permission would be sought from HCFA to provide window replacement as an additional benefit under Rhode Island's RIte Care waiver. Children with blood levels of 15 to 20 µg/dL would receive a more limited service from the Department of Health's Lead program.

JANUARY TO JUNE 1998—Workgroup established with staff from Center for Child and Family Health at the Department of Human Services and staff from Department of Health to develop certification standards for lead centers.

JUNE 1998—Letter sent to HCFA requesting permission to include window replacement as a RIte Care benefit.

JULY 1998—Certification standards for lead centers released; advertisement placed in Providence Newspaper seeking qualified providers.

AUGUST 1998—DHS certifies first lead center.

OCTOBER 1998—Lead center opens.

DECEMBER 1998—Department of Human Services receives HCFA approval for window replacement as a RIte Care benefit.

JANUARY 1999—Department of Human Services and Lead Center meeting to operationalize window replacement benefit.

FEBRUARY 1999-APRIL 2000—Legal staff from Department of Human Services and RI Housing and Mortgage Corporation meet to develop a unified lien for properties receiving abatement, including Medicaid-funded window replacement.

JUNE 2000—1st windows replaced in home of lead poisoned child.

AUGUST 2000—Press conference announcing window replacement program for lead-contaminated houses and new money for lead abatement.

12. EDUCATIONAL STRATEGIES

- **Lead Month**
  May is "Lead Poisoning Prevention Month" in Rhode Island. This statewide health promotion and education effort involves a partnership with community based organizations, child care providers, medical community, other state and local government groups, all of whom organize activities within their community and constituencies to help promote prevention of childhood lead poisoning. A calendar of activities is developed and distributed statewide.

- **Outreach to providers**
  Office visits by the program's staff to medical providers (pediatricians and family practitioners) to offer technical assistance (screening guidelines and case management) and distribute promotional items, posters and educational brochures. This visit is also used to assess use and topics for future editions of the "Lead Update". In addition, using a customer focused approach, and effort is made to introduce and/or promote the "KIDS NET" idea at each visit.

- **Media Campaign**
  An integrated media campaign, under the theme "Lead Poisoning: Danger in Every Corner", using a variety of communication channels (Bus cards, TV and radio PSA's, radio and TV appearances, posters and brochures distribution, through mailing and direct outreach, and grassroots activities) takes place every year.

- **"Keep It Clean" campaign**
  The "Keep It clean" campaign is dedicated to eliminating lead poisoning in children and adults as the result of home improvement projects. By educating the consumer through customer interaction, it aims to spread the word on how to conduct lead-safe work in the home. The core of the campaign is a set of partnerships with local contacts from the "Keep It Clean" campaign (Lead Program staff) and local hardware and paint stores, where families already go to receive "how to" information and to purchase materials. The campaign also includes press releases and stories placement in the media.

- **Parent Consultant**
  With the goal of bringing the consumer (parents) perspective to the program, the Childhood Lead Poisoning Prevention Program works with a bilingual Parent Consultant who acts as the liaison to parents, and participates in community presentations, direct outreach, and peer education.

- **"Lead Update"**
  The bimonthly publication is distributed by fax and mail to medical providers (pediatricians and family practitioners), community-based agencies, child care providers and schools. It contains the latest information on the program's new efforts, research findings, policies, statistics, quality assurance efforts, upcoming events and other field related issues.

- **Web page**
  The Lead Program's web page is another mechanism to bring information to our constituencies. It is being updated continuously and contains the last three to four years of lead poisoning data, past editions of the "Lead Update" as well as the Program's Rules and Regulations. It also offers a way to get educational brochures, and how to contact us and link to other related sites. The page is also available in Spanish.

- **Educational Materials**
  A variety of educational materials are available to parents, professionals and health care providers, with information about prevention measures, the importance of nutrition on children and pregnant women, the sources of lead and ways to prevent lead poisoning, among others. All materials are available in quantities and free of charge. (See form at www.healthri.org/family/lead/edu_mat.htm).

- **Toll free line: 1-800-942-7434.**
  Recognizing that a public information need continues to exist and having in mind a customer satisfaction overall approach, the toll free line is available Monday through Friday and has bilingual (English/Spanish) capacity. The Family Health Information Line staff responds to questions related to lead poisoning and other programs for families with young children, provides referrals to other services and serves as the first friendly point of contact between the public and the Department.

EVALUATING EDUCATIONAL EFFORTS

Neighborhood Outreach Project

The Rhode Island Childhood Lead Poisoning Prevention program launched in 1998 a yearlong Education and Health Promotion statewide campaign, targeting parents of young children. The program developed a comprehensive multi media campaign, using paid TV and radio advertising, PSA's, bus cards, collaterals (poster and brochures) and grassroots initiatives with distribution of incentives. The theme of the campaign was "Lead Poisoning: Danger in Every Corner".

Evaluating Public Health Education and media campaigns, to assess if your methods worked, if you reached the population, if behaviors changed, is the most difficult task to accomplish in the arena of outreach and education. To evaluate the campaign impact and level of program penetration, a Neighborhood Outreach Evaluation effort (conducted door-to-door, but did not offer lead screening as the summer screening program) was conducted in the months of June to August 1999. The purpose of this effort was to assess if the program was providing the community with the information they needed, in a culturally and sensitive way so they can relate to it and make sense of it.

The Neighborhood Outreach Evaluation, throughout a Community Assessment Survey, was a unique program. Its design and approach were tailored to meet ongoing client and program information needs. The survey not only targeted a hard-to-reach population but also included a strategy that promoted parallel program activities such as the summer screening program, conducted also in the summer of 1999. The Neighborhood Outreach Evaluation project strengthened access to services by providing links and referrals when needed. The program also offered an educational component with a post-evaluation phase that was conducted in December 1999.

The Survey conducted in the Neighborhood Outreach Evaluation provided a baseline assessment of the program penetration in Rhode Island low-income urban areas. The Survey was designed with the following objectives in mind:

- To determine the status of lead poisoning prevention program in selected communities
- To assess awareness to health promotion and disease prevention activities
- To determine household means of accessing health information
- To characterize the demographic and social make-up of the target audience

Teams composed of one parent and one adolescent visiting neighborhoods door-to-door and interviewing household members willing to participate conducted the Survey. The effort took place in the three months after the Rhode Island Lead Poisoning Prevention month (May 1999). Neighborhoods with the oldest housing stock within census tract lists representative of economically depressed areas of five core Rhode Island cities (Central Falls, East Providence, Pawtucket, Providence and Woonsocket) were selected.

After completing 475 surveys within the five core cities, findings of the Neighborhood Outreach Evaluation can be summarized as follows:

- **Access to Health**
  90% of respondents has some kind of insurance coverage
  97% of children has insurance coverage
  97% of children has a regular doctor

- **Lead Screening**
  72% of families with children under six stated that all their children had been screened
  15% stated that some of their children had been screened
  13% stated that none of their children had been screened

- **Lead awareness**
  77% of respondents haven't heard about the Family Health Information Line
  80% of respondents were aware of lead problem in Rhode Island

- **Lead Knowledge**
  79% of respondents knew that lead poisoning is preventable
  85% of respondents knew where to go to have children tested
  72% knew where to go for help if confronted with a lead poisoned child.
  89% remember receiving lead prevention advice from physician.

- **Lead Behavior**
  51% of respondents use "cleaning" as primary strategy for lead prevention
  34% of respondents use "more than one" primary strategy for lead prevention
  8% of respondents use "nutrition" as primary strategy for lead prevention
  8% of respondents use "children behavior" as primary strategy for lead prevention

- **Alternate methods to accessing health information**
  69% of the households has a Library card
  91% of the households has a VCR
  34% of the households has a computer
  43% of respondents has access to the Internet

- **Language spoken**
  55% of the respondents identified English as the language spoken at home
  32% of respondents were bilingual
  13% were non-English speaking.
  For 45% of respondents, English was not their primary language.

Additional findings of this effort are still being analyzed and will be available in the future. Interested parties may contact the RI Childhood Lead Poisoning Prevention Program for more details.

MEMBERSHIP

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LEAD POISONING SCREENING EXEMPTION FORM

I object to having my child _____ DOB: _____ receive lead poisoning screening as required under Chapter 24.6 of Rhode Island General Laws because of my religious beliefs, which are as follows:

_____

_____

_____

_____

Signed: _____ **Date:** _____
(parent/guardian)

Address: _____ **Phone:** _____

School: _____

Day Care Provider: _____

Original: School (white)
Copy: Parent (yellow)
Copy: RIDH (pink)

RHODE ISLAND EPSDT PERIODICITY SCHEDULE

	Infancy							Early Childhood						Middle Childhood				Adolescence										
PROCEDURE	NB*	By 1 Mo	2 Mo	4 Mo	6 Mo	9 Mo	12 Mo	15 Mo	18 Mo	24 Mo	30 Mo **	36 Mo	4 Yrs	5 Yrs	6 Yrs	8 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs	19 Yrs	20+ Yrs
History (Initial/Interval)	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Height	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Weight	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Head Circumference	x	x	x	x	x	x	x	x	x	x																		
Blood Pressure												x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Physical Exam (unclothed)	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Developmental/Behavioral/Language/Speech	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Anticipatory Guidance[1]	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vision/Sight Screen	x	x	x	x	x	x	x	x	x	x		x	x	x	x	(x)	x	x	(x)	x	x	x	(x)	x	x	x	(x)	x
Hearing Screening - Subjective	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Hearing Screening - Objective[2]	x											x^2	$(x)^2$	$(x)^2$														
Immunization[3]																												
Hemoglobin/Hematocrit[4]					x	(x)	(x)					x^4	x^4						x^4	$(x)^4$	$(x)^4$	$(x)^4$	$(x)^4$	$(x)^4$	$(x)^4$	$(x)^4$	$(x)^4$	$(x)^4$
Urinalysis[5]																												
Blood Lead Screening[6]						x^6	$(x)^6$	$(x)^6$	$(x)^6$	x^6		x^6	x^6	x^6	x^6														
Hereditary/Metabolic Screen[7]	x	$(x)^7$			$(x)^7$																							
Dental[8]												x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8	x^8
PPD[9]								x^9					x^9	$(x)^9$														
Sexual history[10]																	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}	x^{10}

Notes

x Do at this age

(x) Do at this age unless previously done at scheduled age

** Optional, if earlier visits warrant closer follow-up

* NB - Newborn exam done in the hospital or at two to three days

1 Anticipatory Guidance refers to age-appropriate guidance to parents, children, and adolescents on: injury and illness prevention; developmental surveillance and milestones; sexuality, substance abuse; etc. Refer to publications such as: *Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents* (USPHS)*; Guide to Clinical Preventive Services* (USPHS)*; Guidelines for Adolescent Preventive Services* (AMA)

2 Once during three to five age group, a simple audiometric hearing test must be performed

3 Follow most recent schedule recommended by Advisory Committee on Immunization Practices (ACIP)

4 Do at this age if at risk of nutritional anemia; do for all menstruating adolescents

5 Do only when indicated clinically

6 Screen annually between 9 months and 6 years of age.

7 Refers to metabolic screening if newborn result not known, or testing not done in newborn period, for at-risk groups

8 All children ages three and older must be referred directly to a dentist for screening annually as part of EPSDT exam

9 Do for individuals at risk

10 Include STD screen/pelvic exam as indicate

Rev. October 21, 1999

LEAD SCREENING REQUIREMENT PER RHODE ISLAND LAW/DEPARTMENT OF HEALTH REGULATION

All children in Rhode Island shall be screened for blood lead in accordance with the following schedule:

(a) Each child between nine (9) and thirty-six (36) months of age shall be screened for blood lead at least annually. More frequent blood lead screening of asymptomatic children less than thirty-six (36) months of age may be justified based on the child=s residence, the quality of the housing where the child resides, and the prevalence of lead poisoning in the child=s neighborhood.

(b) Each child between thirty-seven (37) and seventy-two (72) months of age shall be screened for blood lead annually, except as provided for in line (e) below.

(c) Children who are developmentally delayed shall receive blood lead screening tests at intervals appropriate for their developmental age.

(d) Children exhibiting signs or symptoms consistent with lead poisoning (unusual loss of appetite, abdominal pain, or constipation; ingestion of non-food items (pica); seizures without fever; loss of developmental milestones or unusual changes in behavior) shall have an appropriate diagnostic evaluation, including a venous sample for blood lead determination, and shall not be considered appropriate candidates for a blood lead screening test.

(e) **Discontinuance of Annual Blood Lead Screening.** Annual blood lead screening for each child between thirty-seven (37) and seventy-two (72) months of age may be discontinued under the following circumstances:

(1) All of the child=s blood lead screening tests conducted during the first thirty-six (36) months of life were less than fifteen micrograms of lead per deciliter of whole blood; **and**

(2) The child=s first blood lead screening test conducted between thirty-seven (37) and seventy-two (72) months of age was less than fifteen; **and**

(3) The child has not moved to another residence; **and**

(4) The child=s residence has not undergone any change which may pose a lead hazard. Such changes include, but are not limited to, sandblasting of a neighbor=s house or renovation of the child=s home involving generation of lead-contaminated dust; **or**

(5) The child reaches seventy-two (72) months of age.

(f) Notwithstanding the requirements of Paragraphs A.2.1(a) and (b) of these regulations, blood lead screening shall not be conducted if the parents of the child object to such screening on the grounds that it conflicts with their religious tenets and practices.

ACKNOWLEDGMENTS

Rhode Island currently has high blood lead screening rates. Such an achievement is the result of a multitude of efforts made in the last decade from a highly committed community working together to prevent lead poisoning. Among the partners that made this possible are the AAP, health care providers and other primary care providers, the legislature, advocates, hospital based clinics, commercial laboratories, local housing enforcement authorities, health insurers, community based agencies, school departments, early childhood education agencies, WIC and several other state agencies. It is acknowledged that without the partnership of all the entities above, the lead screening task would have been tremendously difficult.

Thanks to all the agencies and entities that contributed in their own way to ensure that more and more Rhode Island children are screened for lead poisoning.